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# Health Awareness of Rural Adolescent Girls: An Intervention Study

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**ABSTRACT** Adolescent girls of age 13 to 19 years constitute nearly 66 million of population in India. The lives of these girls are characterized by limited education, lack of knowledge pertaining to social as well as health aspects and also limited influence on decisions affecting their lives. Thus, awareness is one major factor for development of this group of population because of the fact that these adolescent girls would be the future housewives. A study was undertaken to see the awareness of adolescent girls regarding health aspects through an intervention study. The study adopted a pretest – post test design with an intervention for a specific period. A total of 112 adolescent girls in the age group of 14 to 18 years were selected randomly from government schools of five villages in two blocks of Kangra district of Himachal Pradesh. The tools for assessment consisted of socio-economic status scale and a general awareness scale. The sample group was pretested on their level of general awareness which focused specifically on health aspects. An intervention package was developed on the aspects of health including general health, reproductive and child health, environmental health and nutritional aspects. The intervention was given for nine months to the girls though lectures, discussions and demonstrations. Post testing was done on the girls after the period of intervention. Results showed that the knowledge of girls regarding health aspects improved significantly after intervention. There was a considerable increase in the awareness levels of girls with regard to knowledge of health problems, environmental health, nutritional awareness and reproductive and child health. Thus informative and educable intervention seem to have a positive effect on awareness levels which would eventually encourage expansion of knowledge and positive health habits.

## INTRODUCTION

Adolescence is a crucial period for healthy development in both psychological and physical terms. It is a stage of development transition, i.e. a bridge between childhood and adulthood. It is the stage of development of adult mental process and about adult identity and transition from total socio-economic dependent to relative independent. The WHO has defined adolescence as:-

a) Progression from appearance of secondary sex characteristics (puberty) to sexual and reproductive maturity.
b) Development of adult mental processes and adult identity. (Shirur 2000)

India has one of the fastest growing youth population in world and adolescent girls of age 13 to 19 years constitute nearly 66 million. The lives of these girls are characterized by limited education, lack of knowledge pertaining to social as well as health aspects and also limited influence on decisions affecting their lives. During this period, attitudes, beliefs and values tend to settle into a pattern, out of which emerges the shape and directions of one's life style.

Traditionally, women bear primary responsibility for the well being of their families. Yet they are systematically denied access to the resources they need to fulfill their responsibilities, which includes education, health care services, job training, etc. For young girls in India, poor nutrition, early childbearing and reproductive health complications compound the difficulties of adolescent physical development. Women's reproductive heath is largely influenced by their health status during infancy, childhood and adolescence. Compared with boys, the adolescent girls' health, nutrition, education and development are more neglected which has adverse effect on reproductive health. Most girls are not adequately aware of their increased nutritional needs for growth (especially increasing their food intake to meet calorie demands of pubertal growth) resulting in girls that are underweight and of short stature. Adolescent girls face more problems than boys, largely due to socio-cultural factors. They are deprived of adequate health care, good nutrition and opportunity for schooling.

Health is one of the major issues revolving

the stage of adolescence. Inspite of much efforts from different governmental and non governmental agencies focusing on different health aspects, this young population, especially the girls, are deprived of the basic health care and awareness. The girls are often very ignorant of how their bodies function in terms of sex and reproduction and frequently express a strong desire for the opportunity to discuss such issues. These girls need special care in view of their role in shaping the health and well being of the present as well as future generations. A study by Passi and Malhotra (2002) found that with the onset of menarche at puberty and in the absence of adequate dietary intake, adolescent girls become highly susceptible to anaemia.

In every nation, the welfare of the entire community depends on the health and welfare of youth. The youth and child welfare agencies should acknowledge the fact that the personality of human being is built up in the formative years of the child. Chaudhary (1995) in his study analysed the gender discrimination against the girl child in relation to health, nutrition, education, work participation and adolescence. Educational intervention programmes can help in creating and promoting awareness among the youth and women. A study by Dongre et al. (2006) showed significant improvement in personal hygiene of students and concluded that the school health education program with active involvement of school teacher lead to improvement in personal hygiene in school children and reduction in related morbidities. Through the diverse nutrition and health related roles, women can influence the nutritional status of individual household members and of the entire household as a unit. Hence, the type of care she provides depends to a large extent on her knowledge and understanding of aspects of basic nutrition and health care. Several nutritional studies in rural Indian communities have shown that regular and frequent nutrition and health education provided with health care, food producing and income generating activities resulted in a striking improvement in the nutritional status of infants and preschool children (Food & Nutrition News 2005).

With the above background, the present study was formulated in order to see the awareness of adolescent girls in relation to health and also to see the effect of educational intervention on their knowledge levels.

## METHODOLOGY

A sample group of 112 adolescent girls of age 14 to 18 years were selected randomly from two blocks – Panchrukhi and Bhawarna, of district Kangra of Himachal Pradesh. The sample was selected from five villages from both blocks. The tool consisted of Socio-Economic Status (SES) Scale and a General Awareness schedule. The SES inventory comprised of general information on age, ordinal position, family type, educational status, etc. The general awareness schedule consisted of specific information on health aspects, hygiene, nutritional aspects and reproductive and child health.

A pretest-posttest design was used for the study with intervention for a specific period. The secondary and higher secondary government schools located within villages were selected, out of which efforts were made to choose atleast 20 girls between the age group of 14 to 18 years from each school. Each girl was contacted separately for the interview within the schools. A pretest was conducted on the girls for knowing their general awareness skills and based on their responses an intervention package was developed. This information, as a part of intervention was given for nine months to the girls. Post testing was done after nine months to see the effects of intervention. Intervention in the areas of general awareness was provided to the girls in the schools. Visits to each school were made once a week and the information were given through lectures, discussions and stories. The data was then statistically analysed to see the effect of intervention on girls.

## RESULTS AND DISCUSSION

The background of a person helps in revealing possession of certain knowledge and qualities. The background information of the adolescent girls is given in table 1, according to which majority of the girls (60.7%) were in the age group of 14 to 15 years followed by 36.7% in the age group of 16 to 17 years. An equal percentage (35.7%) of girls were the first and second born in their families. Majority of the girls came from nuclear families (82.1%) and had small family size (50%) of one to four members. The educational level of the parents reveal that majority of the parents of the respondents were educated at least up to middle and high school.

**Table 1: Socio economic status of sample**

| *SES variables* | *Number* | *Percentage* |
|---|---|---|
| *Age of Respondents* | | |
| 14 to 15 years | 68 | 60.7 |
| 16 to 17 years | 41 | 36.6 |
| Above 17 years | 3 | 2.7 |
| *Ordinal Position* | | |
| First | 40 | 35.7 |
| Second | 40 | 35.7 |
| Third | 25 | 22.3 |
| Above third | 7 | 6.25 |
| *Family Type* | | |
| Nuclear | 92 | 82.1 |
| Joint | 20 | 17.9 |
| *Family Size* | | |
| Small | 56 | 50.0 |
| Medium | 54 | 48.2 |
| Large | 2 | 1.8 |
| *Father's Education* | | |
| Illiterate | 3 | 2.7 |
| Upto primary | 8 | 7.1 |
| Middle and high | 61 | 54.4 |
| College | 18 | 16.1 |
| Graduation | 10 | 8.9 |
| Post graduation | 7 | 6.25 |
| *Mother's Education* | | |
| Illiterate | 18 | 16.1 |
| Upto primary | 25 | 22.3 |
| Middle and high | 56 | 50.0 |
| College | 9 | 8.0 |
| Graduation | 1 | 0.9 |

Health awareness is one of the major indicators which reveal a person's knowledge about health problems. It was observed that awareness regarding general health problems increased to certain extent after post testing. This was specifically seen in the problems of cold, backache and stomach related problems. There was also increase in the responses of the causes for different problems in which it was seen that for major health problems the most common cause seen after post testing was that due to cold weather (Table 2). A study by Nair and Nair (2002) revealed that a considerable percentage of women knew about problems like general weakness, pain in abdomen, pain in legs and back. During the pretesting phase, very less percentage of girls had knowledge about water and air-borne diseases. But this knowledge increased considerably after intervention and majority of the girls related stomach problems as water and air-borne diseases (Table 3).

Women possess attributes and skills which are vital to ecological sustainability. They can make a major contribution to managing and conserving natural resources. A high increase was noted in the awareness of girls regarding

**Table 2: Awareness of adolescent girls regarding health**

| *Health knowledge* | *Pre-test* | *Post-test* |
|---|---|---|
| *Knowledge of General Health Problems* | | |
| Cold | 75 (67.0) | 76 (67.8) |
| Cough | 37 (33.0) | 34 (30.3) |
| Fever | 62 (55.3) | 62 (55.3) |
| Stomach related | 41 (36.6) | 94 (83.9) |
| Headache | 54 (48.2) | 52 (46.4) |
| Backache | 13 (11.6) | 14 (12.5) |
| Others | 53 (47.3) | 33 (29.4) |
| *Causes* | | |
| Eating in more quantity | 31 (27.6) | 30 (26.7) |
| Due to cold weather | 35 (31.2) | 55 (49.1) |
| Eating stale foods | 21 (18.7) | 21 (18.7) |
| *Knowledge About Water Borne Diseases* | 10 (8.9) | 43 (38.3) |
| Diarrhea | 24 (21.4) | 41 (36.6) |
| Fever/Typhoid | 12 (10.7) | 18 (16.0) |
| Stomach related problems | 25 (22.3) | 50 (44.6) |
| *Knowledge About Food Borne diseases* | 18 (16) | 59 (52.6) |
| Diarrhea | 37 (33.0) | 62 (55.3) |
| Stomach related | 40 (35.7) | 108 (96.4) |
| Headache | 2 (1.8) | 34 (30.3) |

*Note:* Figures in parenthesis denote percentages

knowledge about environmental pollution including air, water and soil pollution (Table 4). Although one-sixth of the sample at pretesting did not know anything about the effect of environmental pollution on health but after post testing, majority of them thought that different diseases and especially breathing problems can be caused due to pollution. This shows that at least awareness was there in the girls. Different studies have also indicated that women express more concern for the environmental issues than do men (Jaggi et al. 2005). The close association between women and natural resources is more visible in rural context.

For young girls in India, poor nutrition, early childbearing and reproductive health complication compound the difficulties of adolescent physical development. Nutritional deprivation, increased iron demand for adolescent growth,

**Table 3: Effect of intervention on health aspects during testing phases**

| *Phases of testing* | *Mean values* | *t- test value* |
|---|---|---|
| Pre-test | 4.43 (2.0) | 12.49 ** |
| Post-test | 6.14 (1.3) | |

*Note:* Figures in parentheses denote standard deviation
** Significant at 1 % level

**Table 4: Awareness about environmental pollution**

| *Knowledge* | *Pre-test* | *Post-test* |
|---|---|---|
| *Knowledge of Environmental Pollution* | 98 (87.5) | 112 (100) |
| Air pollution | 32 (28.5) | 40 (35.7) |
| Water pollution | 4 (3.5) | 8 (7.1) |
| Soil pollution | 43 (38.3) | 47 (42) |
| *Effect on health* | | |
| No effect | 17 (15.1) | 1 (0.8) |
| Get different diseases | 51 (44.5) | 61 (54.4) |
| Breathing problems | 33 (29.4) | 42 (37.5) |

*Note:* Figures in parenthesis denote percentages

excessive menstrual losses of iron and early and frequent pregnancies aggravate and exacerbate pre-existing anemia. Most girls are not adequately aware of their increased nutritional needs for growth, especially increasing their food intake to meet calorie demands of pubertal growth, resulting in girls that are undernourished and of short stature. In the present study, it was seen that although knowledge of girls regarding nutrients increased during post testing, but less number of girls were aware about nutritional deficiency diseases, etc. (Table 5). The results are in concurrence with the study by Saibaba et al. (2002) which revealed that use of educational aids through intervention have a positive effect on the nutritional knowledge of girls which may ultimately improve their nutritional status (Table 6). Also in a study done in Haryana (SFWACF 1998) involving intervention to adolescent girls it was seen that knowledge and awareness of the girls regarding anemia and iron rich foods like jaggery and black gram increased invariably. The significant t-values at one percent levels of health (12.49) and nutritional aspects (28.70) reveal that

**Table 5: Nutritional awareness of girls**

| *Knowledge* | *Pre-test* | *Post-test* |
|---|---|---|
| *Knowledge of Nutrients* | 74 (66.0) | 80 (71.4) |
| Proteins | 35 (31.2) | 61 (54.4) |
| Vitamins | 28 (25) | 28 (25) |
| Carbohydrates | 15 (13.3) | 31 (27.6) |
| Fats | 19 (16.9) | 26 (23.2) |
| Minerals | 21 (18.7 | 25 (22.3) |
| *Knowledge About Nutritional Deficiencies* | 59 (52.6) | 77(68.7) |
| Beriberi | 41 (36.6) | 46 (41.0) |
| Night blindness | 61 (54.4) | 80 (71.4) |
| Anemia | 14 (12.5) | 29 (25.8) |
| Rickets | 15 (13.3) | 15 (13.3) |
| Scurvy | 33 (29.4) | 36 (32.1) |

*Note:* Figures in parenthesis denote percentages

**Table 6: Effect of intervention on nutritional aspects during testing phases**

| *Phases of testing* | *Mean values* | *t- test value* |
|---|---|---|
| Pre-test | 28.3 (11.3) | 28.70 ** |
| Post-test | 34.7 (6.3) | |

*Note:* Figures in parentheses denote standard deviation
** Significant at 1 % level

the intervention had significant effect on the level of knowledge of girls in these areas.

Girls in the stage of adolescence need special care particularly in shaping their health and well being. They need to be well informed about each and every aspect of health and other related areas including reproductive health. It was observed that very less percentage of girls knew about reproductive organs (27.6%) and secondary sexual characteristics (4.4%) at the time of pretest. It was very interesting to note that inspite of the girls studying in $8^{th}$, $9^{th}$ and $10^{th}$ standards, they did not have knowledge about primary and secondary sexual characteristics. This may be due to that sex is considered to be very sensitive topic and matters related are generally not discussed openly with teachers and parents. But after six months of intensive intervention through discussions an increase was seen in their knowledge levels. Also majority of the girls did not know about the timing of appearance of secondary sexual characteristics (Table 7).

Majority of the girls faced problems during menstrual periods and pain in lower abdomen or stomach ache (as perceived by them) (86.6%) followed by backache (35.7%). The percentage of girls knowing about the ideal child bearing age was however found to be same and majority (43.7%) perceived the age of 26 to 30 years as ideal child-bearing age followed by 31.2% for 18 to 25 years. A slight increase was seen in the perception of ideal family size which was 70% for a family of one to four members. According to a study by WFP (1997) adolescent girls are deprived of adequate health care, good nutrition and opportunity for schooling. Stunted anaemic girls with inadequate knowledge of personal care, family planning or child rearing practices enter marriage and motherhood, thus perpetuating the problems of malnutrition and poverty to the coming generation. On an average most adolescent girls in India, have little knowledge of menstruation, sexuality and reproduction. Large number of rural and urban population believes that menstruation contaminates the body and makes it unholy. As a

**Table 7. Awareness of girls regarding reproductive and child health**

| *Awareness* | *Pre-test* | *Post-test* |
|---|---|---|
| Knowledge of Secondary Sex Characteristics | 5 (4.4) | 18 (16) |
| *Timing of Appearance* | | |
| No knowledge | 98 (87.5) | 88 (78.5) |
| 12 to 13 years | 8 (7.1) | 12 (10.8) |
| 14 to 15 years | 5 (4.4) | 12 (10.8) |
| *Problems During Menstrual Periods* | | |
| Stomach ache/pain in lower abdomen | 97 (86.6) | 97 (86.6) |
| Backache | 40 (35.7) | 40 (35.7) |
| Tiredness | 9 (8) | 10 (8.9) |
| *Ideal Child Bearing Age* | | |
| 18 to 25 years | 35 (31.2) | 35 (31.2) |
| 26 to 30 years | 49 (43.7) | 49 (43.7) |
| After 30 years | 19 (17) | 19 (17) |
| *Immunization to Pregnant Women* | | |
| No knowledge | 85 (75.8) | 71 (63.3) |
| Tetanus | 17 (15.0) | 26 (23.2) |
| Measles | 4 (3.5) | 12 (10.7) |
| Others | 6 (5.3) | 3 (2.6) |
| *Timing of Vaccination* | | |
| No knowledge | 92 (82.1) | 69 (61.1) |
| 2 months | 11 (9.8) | 28 (25) |
| $6^{th}$ to $8^{th}$ months | 8 (7.14) | 28 (25) |
| *Ideal Family Size* | | |
| 1 to 4 | 77 (68.7) | 79 (70.5) |
| 5 to 8 | 32 (28.5) | 34 (30.3) |
| Above 8 | 16 (14.8) | 12 (10.7) |
| *Ideal Birth Spacing* | | |
| 1 to 2 years | 73 (65.1) | 66 (59) |
| 3 to 5 years | 39 (34.8) | 46 (41.0) |
| *Knowledge About Family Planning Method* | | |
| Sterilization | 65 (58.0) | 71 (63.3) |
| Pills | 24 (21.4) | 30 (26.7) |
| Condoms | 4 (3.5) | 4 (3.5) |
| Others | 5 (4.4) | 7 (6.2) |
| *Ideal Place of Birth* | | |
| Hospital | 107 (95.5) | 107 (95.5) |
| Home | 2 (1.80 | 2 (1.8) |
| No knowledge | 4 (3.5) | 4 (3.5) |

*Note:* Figures in parenthesis denote percentages

consequence the girls often see themselves as impure, unclean and dirty. According to Nutrition Foundation of India, the average age at menarche is 13.4 years, yet 50 % of girls aged 12 to 15 years do not know about menstruation. This lack of information can be attributed to a veil of secrecy that surrounds menarche.

According to a study conducted in 12 north Indian villages with 400 girls in 10 to 16 years age group showed that formal education did not modify their social attitudes. They had limited knowledge about their bodies and bodily functions. They were unaware of the basic facts of contraception, child-bearing and rearing. In their intervention programs, adolescent girls who participated in the Anganwadi activities regularly had better knowledge on nutrition and health as opposed to those who were participating irregularly (WFP 1997). In the present study, majority of the girls did not know about type and timings of immunization given to pregnant women, although the percentage increased during post testing. In a study by Gupta et al. (2001), it was found that awareness of at least one method of immunization was present in majority of girls and most of them were aware of polio, BCG, TT, Measles and DPT. There was also increase in percentage of girls telling about ideal birth spacing of 3 to 5 years during post testing (34.8%) as compared to 1 to 2 years (65% to 59%).

Most of the girls knew about family planning methods and out of which 63.3% for sterilization and 26.7% for pills (Table 7). Awareness plays a pivotal role in motivating women to have a favorable attitude towards family planning and to adopt family planning behaviour. The reason of girls knowing more about these measures might be their exposure to media. Majority of them (95.5%) knew that the ideal place of birth was hospital. The spread of RTIs and STDs including AIDS in India has been posing a major health threat since more than past one decade. The prevalence of RTIs including STIs is found to have upto 25 to 30% in some of states. A number of studies (Bang et al. 1989; Bang and Bang 1993 and Pachauri et al. 1994) have shown that many Indian women suffer from RTI and in most of the situation, it is because of lack of awareness. With reference to knowledge related to AIDS, most (93.7%) knew about its mode of transmission out of which most responses came for infected syringes, unsafe relations, using infected blood, etc. Only 8 % of the respondents knew about STDs. In a study by Kumar and Sinha (2005), 46.8 percent of women were aware of STIs in districts of Jharkhand. Knowledge about the spread of HIV and safe sexual practices has a critical impact on the prevention of AIDS. In a study by (Parchure and Warvadekar 2005)) it was revealed that awareness about RTI, STI and HIV-AIDS among women was very low in Madhya Pradesh. Only 24% of women have heard about HIV-AIDS whereas 16% and 11% women are aware about RTI and STI respectively. In Kolkata only 13.5 senior school students had clear knowledge regarding AIDS – its general aspects, transmission and prevention (Chatterjee et al. 2001).

The intervention regarding reproductive and

child health showed a significant effect in the knowledge levels of girls as seen by t-test value of 7.924 at 1 percent level of significance. It is generally believed that intervention studies seem to bring a positive change in lives of people. Also a study in 12 villages of Andhra Pradesh demonstrated that mothers with considerable knowledge and understanding of basic aspects of nutrition and health adopted improved child feeding and rearing practices.

Human beings can alter their lives by changing their attitudes. Educational interventions can help change the attitudes of people for their betterment. Since adolescence is a period of rapid personal, physical and intellectual development and the effects of poverty, illiteracy as well as lack of nutritional and health care are further magnified by gender discrimination, girls of this age group need to be addressed as special target category by development programmes. They need to be given an education that would give rise to their self confidence and decision making skills. Thus it can be concluded from the above study that educational intervention, if given in right manner, can bring out positive changes in its true sense and can modify or change the lives of people. This holds true more for the younger population as they are the future men and women who would promote growth and development of our nation.

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